

United States Regulation of Consumer Products and Transparency Initiatives

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Presentation Outline

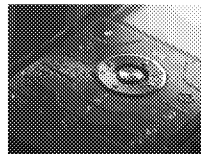
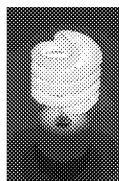
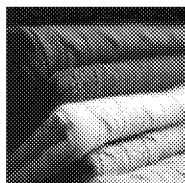
- The U.S. Regulatory Framework:
U.S. Environmental Protection Agency (EPA) vs.
Consumer Product Safety Commission (CPSC)
- Transparency Initiatives
- The Evolution of Chemistry

“Consumer Products” are...

Products sold *to consumers* for use in a household or residence

Products sold or distributed *for consumer use* in home, residence, school or in recreation “or otherwise”

- Components are included



“Consumer Products” do not include...



Purely industrial products

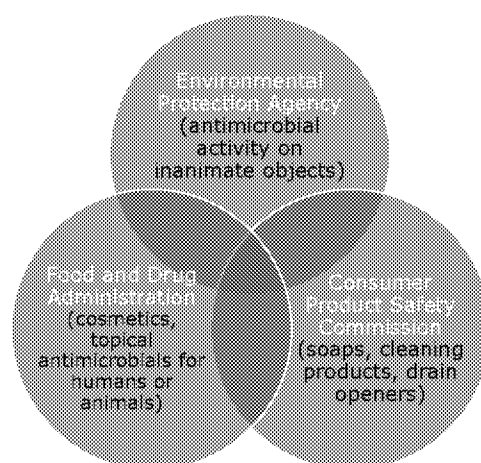
- Grey area – industrial type products sold to consumers, e.g. ice cream machine

By statute, products under the jurisdiction of other agencies/statutes:

- Pesticides (including biocides) as defined by U.S. law (FIFRA)



Regulatory Overlap



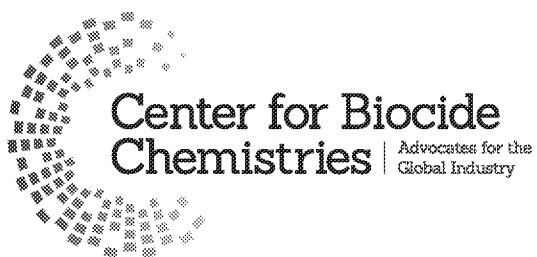
U.S. Regulatory Framework



It's all about the Claims!

- Cleans surfaces – CPSC
- Cleans and disinfects surfaces – EPA
- Cleans hands – FDA





The U.S. Regulatory Framework: EPA vs. CPSC

Consumer Product Safety Commission



Independent Agency

- Agency not required to comply with Executive Orders (but can choose to comply)
- Agency can vote to override Office of Management and Budget (OMB) disapproval of proposed rule publication, other "collection of information"

Commissioners appointed by the President, confirmed by the Senate

Serve 7 year terms, fixed and independent from the Administration

No more than 3 Commissioners can be from the same political party



Statutes Administered by CPSC



Consumer Product Safety Act (CPSA)

Consumer Product Safety Improvement Act (CPSIA)

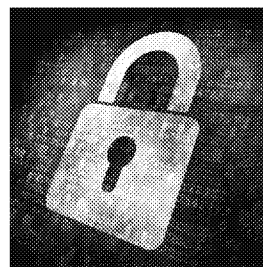
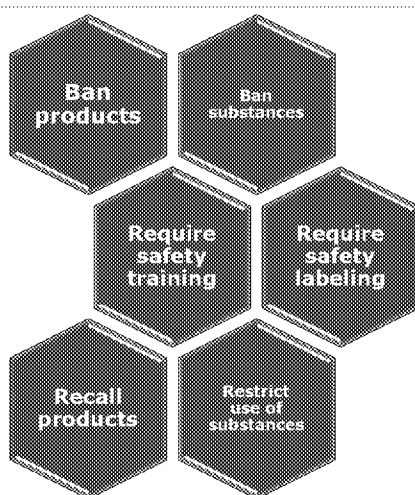
Federal Hazardous Substances Act (FHSA)

Flammable Fabrics Act

Poison Prevention Packaging Act

Refrigerator Safety Act

CPSC Regulatory Tools



Examples of CPSC Activities



1977: Banned asbestos-containing consumer patching compounds

1977: Banned lead paint on toys and furniture

1988: Banned butyl nitrite (except as approved under Food, Drug & Cosmetic Act)

1990: Banned isopropyl nitrite and other nitrites (except as approved under Food, Drug & Cosmetic Act)

2008: CPSIA increased stringency of lead paint ban, permanently banned 3 phthalates, interim ban on 3 others



Mandatory Self-Reporting of Product Hazards to CPSC



Self-reporting is required for:

- (1) a “substantial product hazard” or
- (2) an “unreasonable risk of injury or death”



Self-Reporting Procedure



Initial Report

within 24 hours of learning of a substantial product hazard or unreasonable risk of injury or death

Full Report

follows that should contain additional identifying detail relating to the product, nature of the defect and how it came to the attention of the company, total number of products involved, and company response

Failing to report may lead to penalties as high as \$16,025,000

CPSC Response to a Self-Report



Fast Track Recall

Voluntary or
government-driven

Public Notice

CPSC requires the manufacturer to provide public notice of the defect, mail notice to all distributors and retailers, and mail a notice to every known purchaser of the product

Temporary Injunction

CPSC or Attorney General restrain distribution of the product for up to 30 days to allow CPSC to determine whether a hazard exists

The Federal Hazardous Substances Act



The FHSA requires "hazardous products" to meet warning labeling requirements, including:

- (1) Prominent
 - Principal Display Panel
 - Horizontal placement
 - Placed together
- (2) Conspicuous
 - Type size
 - Contrast (color, layout, typography)
 - No interference, clutter



FHSA Requirements



Signal Word:

- "CAUTION" or "WARNING"
- "DANGER" for products that are corrosive, extremely flammable, or highly toxic
- If highly toxic, "POISON" and "DANGER"

"Keep out of the reach of children"

Affirmative Statement of Principal Hazards: e.g. "Harmful if Swallowed,"

Precautionary statements, instructions for first aid, storage and care instructions

Common chemical name

Name, business address of manufacturer, packer, distributor or seller



CPSC Regulation of Children's Products



"Children's product": designed or intended primarily for children age 12 and younger

A Children's Product Certificate is required to certify safety, which must be supported by third-party testing. The certificate must include:

- Identification information (product, importer/manufacturer, contact person)
- Citation to each CPSC children's product safety rule to which the product is being certified (e.g. 15 U.S.C. § 1278a, Ban on Total Lead Content in Excess of 100 ppm in Children's Products)
- Third-party testing laboratory and dates/location of testing



CPSC Authority Summary



Requires Reporting of Product Hazards and can order a range of enforcement/compliance activities

Requires labeling of products for certain hazards

Imposes a regime to ensure children's products meet regulatory requirements

Applies broadly to consumer products with certain exceptions, including pesticides



Statutes Administered by U.S. EPA Related to Biocides



Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)

Federal Food, Drug, and Cosmetics Act (FFDCA)

Pesticide Registration Improvement Act (PRIA)

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)



FIFRA is the principal statute regulating pesticides in the U.S.

"Pesticides" include:

- Antimicrobials/biocides

Intended to (i) disinfect, sanitize, reduce, or mitigate growth or development of microbiological organisms; or (ii) protect inanimate objects, industrial processes or systems, surfaces, water, or other chemical substances from contamination, fouling, or deterioration caused by bacteria, viruses, fungi, protozoa, algae, or slime.

- Plant Protection Products
- Biopesticides



FIFRA: Requirements for Biocides



All pesticides require EPA registration prior to marketing or distribution

- EPA must approve each use for the product
- EPA regulates all components of a pesticide product, including active and inert ingredients

EPA requires data before approval

- Data requirements must be satisfied before the product may enter the market
- Data requirements are identified in regulations 40 CFR Part 158W



FIFRA Labels



The Label is the Law

- "It is a violation of Federal law to use this product in a manner inconsistent with its labeling." 40 CFR 156.10(i)(2)(ii).

The label determines how the product can be used

- Who may use a pesticide
- Where can the product be used (indoor? food?)
- How may the product be used (based on claims)
- How much to use
- How often to apply

Website reference on the label = labeling under FIFRA

FIFRA label requirements are found in 40 CFR 156.10 and EPA's Label Review Manual at <https://www.epa.gov/sites/production/files/2018-04/documents/lrm-complete-mar-2018.pdf>



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MOSQUITO REPELLENT



100% LARVAE REPELLENT FOR MOSQUITOES
WASHING - Wash clothes in hot water.

Today's ingredients
2007-2008-2009-2010-2011-2012-2013-2014-2015-2016-2017-2018-2019-2020-2021-2022-2023-2024-2025-2026-2027-2028-2029-2030-2031-2032-2033-2034-2035-2036-2037-2038-2039-2040-2041-2042-2043-2044-2045-2046-2047-2048-2049-2050-2051-2052-2053-2054-2055-2056-2057-2058-2059-2060-2061-2062-2063-2064-2065-2066-2067-2068-2069-2070-2071-2072-2073-2074-2075-2076-2077-2078-2079-2080-2081-2082-2083-2084-2085-2086-2087-2088-2089-2090-2091-2092-2093-2094-2095-2096-2097-2098-2099-2100-2101-2102-2103-2104-2105-2106-2107-2108-2109-2110-2111-2112-2113-2114-2115-2116-2117-2118-2119-2120-2121-2122-2123-2124-2125-2126-2127-2128-2129-2130-2131-2132-2133-2134-2135-2136-2137-2138-2139-2140-2141-2142-2143-2144-2145-2146-2147-2148-2149-2150-2151-2152-2153-2154-2155-2156-2157-2158-2159-2160-2161-2162-2163-2164-2165-2166-2167-2168-2169-2170-2171-2172-2173-2174-2175-2176-2177-2178-2179-2180-2181-2182-2183-2184-2185-2186-2187-2188-2189-2190-2191-2192-2193-2194-2195-2196-2197-2198-2199-2200-2201-2202-2203-2204-2205-2206-2207-2208-2209-2210-2211-2212-2213-2214-2215-2216-2217-2218-2219-2220-2221-2222-2223-2224-2225-2226-2227-2228-2229-2230-2231-2232-2233-2234-2235-2236-2237-2238-2239-2240-2241-2242-2243-2244-2245-2246-2247-2248-2249-2250-2251-2252-2253-2254-2255-2256-2257-2258-2259-2260-2261-2262-2263-2264-2265-2266-2267-2268-2269-2270-2271-2272-2273-2274-2275-2276-2277-2278-2279-2280-2281-2282-2283-2284-2285-2286-2287-2288-2289-2290-2291-2292-2293-2294-2295-2296-2297-2298-2299-2300-2301-2302-2303-2304-2305-2306-2307-2308-2309-2310-2311-2312-2313-2314-2315-2316-2317-2318-2319-2320-2321-2322-2323-2324-2325-2326-2327-2328-2329-2330-2331-2332-2333-2334-2335-2336-2337-2338-2339-2340-2341-2342-2343-2344-2345-2346-2347-2348-2349-2350-2351-2352-2353-2354-2355-2356-2357-2358-2359-2360-2361-2362-2363-2364-2365-2366-2367-2368-2369-2370-2371-2372-2373-2374-2375-2376-2377-2378-2379-2380-2381-2382-2383-2384-2385-2386-2387-2388-2389-2390-2391-2392-2393-2394-2395-2396-2397-2398-2399-2400-2401-2402-2403-2404-2405-2406-2407-2408-2409-2410-2411-2412-2413-2414-2415-2416-2417-2418-2419-2420-2421-2422-2423-2424-2425-2426-2427-2428-2429-2430-2431-2432-2433-2434-2435-2436-2437-2438-2439-2440-2441-2442-2443-2444-2445-2446-2447-2448-2449-2450-2451-2452-2453-2454-2455-2456-2457-2458-2459-2460-2461-2462-2463-2464-2465-2466-2467-2468-2469-2470-2471-2472-2473-2474-2475-2476-2477-2478-2479-2480-2481-2482-2483-2484-2485-2486-2487-2488-2489-2490-2491-2492-2493-2494-2495-2496-2497-2498-2499-2500-2501-2502-2503-2504-2505-2506-2507-2508-2509-2510-2511-2512-2513-2514-2515-2516-2517-2518-2519-2520-2521-2522-2523-2524-2525-2526-2527-2528-2529-2530-2531-2532-2533-2534-2535-2536-2537-2538-2539-2540-2541-2542-2543-2544-2545-2546-2547-2548-2549-2550-2551-2552-2553-2554-2555-2556-2557-2558-2559-2560-2561-2562-2563-2564-2565-2566-2567-2568-2569-2570-2571-2572-2573-2574-2575-2576-2577-2578-2579-2580-2581-2582-2583-2584-2585-2586-2587-2588-2589-2590-2591-2592-2593-2594-2595-2596-2597-2598-2599-2600-2601-2602-2603-2604-2605-2606-2607-2608-2609-2610-2611-2612-2613-2614-2615-2616-2617-2618-2619-2620-2621-2622-2623-2624-2625-2626-2627-2628-2629-2630-2631-2632-2633-2634-2635-2636-2637-2638-2639-2640-2641-2642-2643-2644-2645-2646-2647-2648-2649-2650-2651-2652-2653-2654-2655-2656-2657-2658-2659-2660-2661-2662-2663-2664-2665-2666-2667-2668-2669-2670-2671-2672-2673-2674-2675-2676-2677-2678-2679-2680-2681-2682-2683-2684-2685-2686-2687-2688-2689-2690-2691-2692-2693-2694-2695-2696-2697-2698-2699-2700-2701-2702-2703-2704-2705-2706-2707-2708-2709-2710-2711-2712-2713-2714-2715-2716-2717-2718-2719-2720-2721-2722-2723-2724-2725-2726-2727-2728-2729-2730-2731-2732-2733-2734-2735-2736-2737-2738-2739-2740-2741-2742-2743-2744-2745-2746-2747-2748-2749-2750-2751-2752-2753-2754-2755-2756-2757-2758-2759-2760-2761-2762-2763-2764-2765-2766-2767-2768-2769-2770-2771-2772-2773-2774-2775-2776-2777-2778-2779-2780-2781-2782-2783-2784-2785-2786-2787-2788-2789-2790-2791-2792-2793-2794-2795-2796-2797-2798-2799-2800-2801-2802-2803-2804-280

- 1) Read the entire label
- 2) Clearly apply labels to the correct organ at which the applied
- 3) Remove all pesticides on their original containers

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1. The first step is to identify the problem. In this case, the problem is that the system is not working as expected.

2. The next step is to gather information about the problem. This includes checking the logs, looking at the configuration files, and talking to the users who are reporting the problem.

3. Once you have gathered information, you can start to troubleshoot the problem. This involves testing different hypotheses and trying to reproduce the problem.

4. If you are unable to reproduce the problem, you may need to look at the system as a whole. This could involve checking the hardware, the network, and the operating system.

5. Once you have identified the cause of the problem, you can start to fix it. This could involve changing the configuration, updating the software, or replacing the hardware.

6. Finally, you should test the system to make sure that the problem has been fixed. This involves running the system through a series of tests and checking the results.

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Goodbye! Bye-bye! =====
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Goodbye! Good! A happy Goodbye! to you
congratulations for finishing school. Good luck in your future!
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Symposium

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Abstract

Stress can be harmful to the body.

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2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022-2023, 2023-2024, 2024-2025, 2025-2026, 2026-2027, 2027-2028, 2028-2029, 2029-2030, 2030-2031, 2031-2032, 2032-2033, 2033-2034, 2034-2035, 2035-2036, 2036-2037, 2037-2038, 2038-2039, 2039-2040, 2040-2041, 2041-2042, 2042-2043, 2043-2044, 2044-2045, 2045-2046, 2046-2047, 2047-2048, 2048-2049, 2049-2050, 2050-2051, 2051-2052, 2052-2053, 2053-2054, 2054-2055, 2055-2056, 2056-2057, 2057-2058, 2058-2059, 2059-2060, 2060-2061, 2061-2062, 2062-2063, 2063-2064, 2064-2065, 2065-2066, 2066-2067, 2067-2068, 2068-2069, 2069-2070, 2070-2071, 2071-2072, 2072-2073, 2073-2074, 2074-2075, 2075-2076, 2076-2077, 2077-2078, 2078-2079, 2079-2080, 2080-2081, 2081-2082, 2082-2083, 2083-2084, 2084-2085, 2085-2086, 2086-2087, 2087-2088, 2088-2089, 2089-2090, 2090-2091, 2091-2092, 2092-2093, 2093-2094, 2094-2095, 2095-2096, 2096-2097, 2097-2098, 2098-2099, 2099-2100, 2100-2101, 2101-2102, 2102-2103, 2103-2104, 2104-2105, 2105-2106, 2106-2107, 2107-2108, 2108-2109, 2109-2110, 2110-2111, 2111-2112, 2112-2113, 2113-2114, 2114-2115, 2115-2116, 2116-2117, 2117-2118, 2118-2119, 2119-2120, 2120-2121, 2121-2122, 2122-2123, 2123-2124, 2124-2125, 2125-2126, 2126-2127, 2127-2128, 2128-2129, 2129-2130, 2130-2131, 2131-2132, 2132-2133, 2133-2134, 2134-2135, 2135-2136, 2136-2137, 2137-2138, 2138-2139, 2139-2140, 2140-2141, 2141-2142, 2142-2143, 2143-2144, 2144-2145, 2145-2146, 2146-2147, 2147-2148, 2148-2149, 2149-2150, 2150-2151, 2151-2152, 2152-2153, 2153-2154, 2154-2155, 2155-2156, 2156-2157, 2157-2158, 2158-2159, 2159-2160, 2160-2161, 2161-2162, 2162-2163, 2163-2164, 2164-2165, 2165-2166, 2166-2167, 2167-2168, 2168-2169, 2169-2170, 2170-2171, 2171-2172, 2172-2173, 2173-2174, 2174-2175, 2175-2176, 2176-2177, 2177-2178, 2178-2179, 2179-2180, 2180-2181, 2181-2182, 2182-2183, 2183-2184, 2184-2185, 2185-2186, 2186-2187, 2187-2188, 2188-2189, 2189-2190, 2190-2191, 2191-2192, 2192-2193, 2193-2194, 2194-2195, 2195-2196, 2196-2197, 2197-2198, 2198-2199, 2199-2200, 2200-2201, 2201-2202, 2202-2203, 2203-2204, 2204-2205, 2205-2206, 2206-2207, 2207-2208, 2208-2209, 2209-2210, 2210-2211, 2211-2212, 2212-2213, 2213-2214, 2214-2215, 2215-2216, 2216-2217, 2217-2218, 2218-2219, 2219-2220, 2220-2221, 2221-2222, 2222-2223, 2223-2224, 2224-2225, 2225-2226, 2226-2227, 2227-2228, 2228-2229, 2229-2230, 2230-2231, 2231-2232, 2232-2233, 2233-2234, 2234-2235, 2235-2236, 2236-2237, 2237-2238, 2238-2239, 2239-2240, 2240-2241, 2241-2242, 2242-2243, 2243-2244, 2244-2245, 2245-2246, 2246-2247, 2247-2248, 2248-2249, 2249-2250, 2250-2251, 2251-2252, 2252-2253, 2253-2254, 2254-2255, 2255-2256, 2256-2257, 2257-2258, 2258-2259, 2259-2260, 2260-2261, 2261-2262, 2262-2263, 2263-2264, 2264-2265, 2265-2266, 2266-2267, 2267-2268, 2268-2269, 2269-2270, 2270-2271, 2271-2272, 2272-2273, 2273-2274, 2274-2275, 2275-2276, 2276-2277, 2277-2278, 2278-2279, 2279-2280, 2280-2281, 2281-2282, 2282-2283, 2283-2284, 2284-2285, 2285-2286, 2286-2287, 2287-2288, 2288-2289, 2289-2290, 2290-2291, 2291-2292, 2292-2293, 2293-2294, 2294-2295, 2295-2296, 2296-2297, 2297-2298, 2298-2299, 2299-2300, 2300-2301, 2301-2302, 2302-2303, 2303-2304, 2304-2305, 2305-2306, 2306-2307, 2307-2308, 2308-2309, 2309-2310, 2310-2311, 2311-2312, 2312-2313, 2313-2314, 2314-2315, 2315-2316, 2316-2317, 2317-2318, 2318-2319, 2319-2320, 2320-2321, 2321-2322, 2322-2323, 2323-2324, 2324-2325, 2325-2326, 2326-2327, 2327-2328, 2328-2329, 2329-2330, 2330-2331, 2331-2332, 2332-2333, 2333-2334, 2334-2335, 2335-2336, 2336-2337, 2337-2338, 2338-2339, 2339-2340, 2340-2341, 2341-2342, 2342-2343, 2343-2344, 2344-2345, 2345-2346, 2346-2347, 2347-2348, 2348-2349, 2349-2350, 2350-2351, 2351-2352, 2352-2353, 2353-2354, 2354-2355, 2355-2356, 2356-2357, 2357-2358, 2358-2359, 2359-2360, 2360-2361, 2361-2362, 2362-2363, 2363-2364, 2364-2365, 2365-2366, 2366-2367, 2367-2368, 2368-2369, 2369-2370, 2370-2371, 2371-2372, 2372-2373, 2373-2374, 2374-2375, 2375-2376, 23

FOR THE
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SINCE 1973

To demonstrate the strength and performance of
this technology in this area, we have made
many significant improvements in our technology.
SINCE 1973

FIFRA Label Amendments



Most modifications to the label require approval by EPA

- Application (EPA Form 8570-1)
- EPA review of data may be required – e.g. new use, new application rate, change in precautionary statements, new public health claim, exposure changes
- EPA must approve the amendment and new label before the product can be distributed/sold

Small changes may qualify for a “notification” or “non-notification” (e.g. correction of typographical errors)

PRIA: Fee for Service and Timeframes



Enacted to provide certainty regarding the timeframes for EPA action on specified types of pesticide applications and amendments.

Establishes a schedule of fees for each specified action and a time frame within which EPA must complete its review

PRIA decision tree sets the appropriate category for particular actions:
<https://www.epa.gov/pria-fees/pria-3-fee-determination-decision-tree>

PRIA schedule of actions, fees and timeframes:
<https://www.epa.gov/pria-fees/fy-201617-fee-schedule-registration-applications>



Federal Food Drug and Cosmetic Act (FFDCA)



FFDCA Section 408 authorizes EPA to set standards governing pesticide chemical residues in/on food

- Tolerances (the US term for maximum residue levels (MRLs) for pesticide residues in food)
- Exemptions from tolerance (no numeric limit but use conditions)
- A tolerance or exemption must cover all pesticide residues on food in commerce or the food is adulterated under FFDCA



Enforcement Tools



FIFRA Civil

- Notices of Warning
- Notices of Detention
- Stop Sale, Use, or Removal Orders
- Seizures
- Monetary Penalties

FIFRA Criminal

- Prosecution can be brought for "knowing" violations

FFDCA

- Food containing unauthorized pesticide residues is considered adulterated and can be subject to: warning letters, seizures, injunction, refused entry of imported goods, import alerts, and detention without physical examination

FIFRA Enforcement – Civil Penalties



Current maximum penalty is \$19,446 per violation

5 year statute of limitations

EPA has a penalty policy for each program it administers:

<https://www.epa.gov/enforcement/enforcement-response-policies-and-guidance>

The FIFRA penalty policy is complex, and the penalties assigned in a particular case will depend on several factors

<https://www.epa.gov/sites/production/files/documents/fifra-erp1209.pdf>

FIFRA Adverse Effects Reporting Requirement



FIFRA § 6(a)(2) requires reporting of “adverse effects” related to registered pesticides. See, <https://www.epa.gov/pesticide-incidents/incident-reporting-pesticide-manufacturers-registrants>

Interpreted to apply to any information relevant to a registration, including information from related compounds

EPA relies on these reports in evaluating continuing approval of registrations

Violations could lead to civil or criminal enforcement



Recent FIFRA Enforcement Example



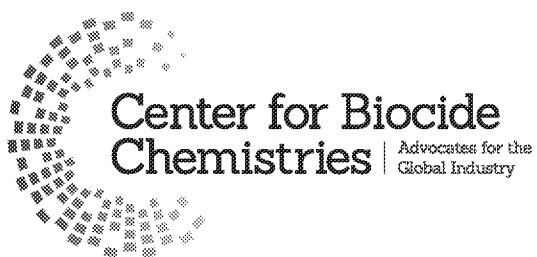
(R10) – Amazon Services LLC (February 2018)

Settlement Details

- Settlement Value: \$2,739,354
 - \$1,215,700 cash penalty
 - \$1,523,654 in SEP
- Collaboration with
 - Regions 4, 9, Headquarters

Violations

- *Unregistered and Misbranded pesticide products*
 - 3,792 separate occasions
- *Six (6) foreign manufactured pesticides*
 - 3Pos. Cockroach Cockroaches Bugs
 - Ants Roach Kills Chalk;
 - Miraculous Insecticide Chalk;
 - HUA Highly effective Cockroach killing Bait Powder;
 - R.B.T.Z. Highly effective Cockroach killing Bait Powder;
 - Green Leaf Powder Fly Killing Bait; and
 - ARS Mat 12



Transparency Initiatives

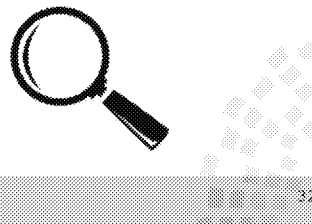
Greater Transparency



FIFRA requires disclosure of the active ingredient, but expressly protects the identity of inert ingredients.

Some retailers and one state are requiring product manufacturers to list ingredients on product labels and/or their websites

- Asking for disclosure of ingredients that FIFRA does not require to be require
- All ingredients
- Certain "Chemicals of Concern"



California SB 258



California is the first U.S. state to require on-pack and online disclosure of ingredients in cleaning products, including online disclosure for cleaning products regulated by FIFRA

Which product categories does the policy cover?

- Air care, automotive, general cleaning, or polish or floor maintenance products used primarily for commercial janitorial, domestic, or institutional cleaning purposes

Who must comply?

- Manufacturers of products sold in California

What needs to be disclosed?

- Full list of intentionally added ingredients, except certain fragrance ingredients and ingredients protected as CBI



Other State Ingredient Disclosure Initiatives



States consider bills modeled on CA SB 258

- Maryland legislation failed in committee during 2018 session
- Additional legislation expected in 2019 legislative sessions

New York: Governor-driven initiative finalized in 2018 requires online disclosure of all ingredients in cleaning products; exempts FIFRA-regulated products

CA Prop 65: New regulations expand Prop 65 warning requirements. CA and EPA still evaluating how to provide Prop 65 warnings for pesticides



Walmart On-Package Disclosure



Walmart, the largest U.S. retailer, expects suppliers to list ingredients using one of the following on-pack options:

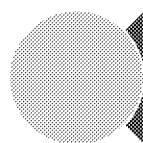
- Chemicals on California SB 258 designated list
- Full Listing (i.e., all intentionally added ingredients)

Suppliers are expected to begin on-pack listing starting in 2018, but, for registered pesticides, only as registrants update labels

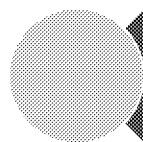
A number of issues remain to be resolved among all stakeholders



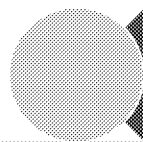
Ingredient Disclosure Summary



This is an area of substantial activity for both governments and marketplace participants

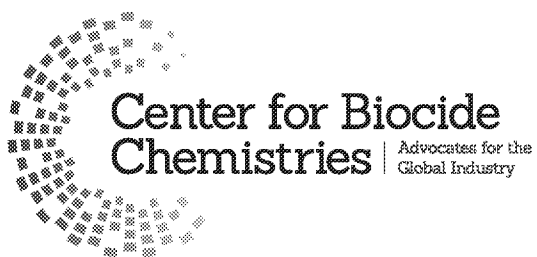


It is likely to continue to evolve



Ingredient disclosure has been accepted by industry which seeks a level playing field to minimize competitive impacts





The Evolution of Green Chemistry

Multiple Programs Promote Environmentally Preferable Products



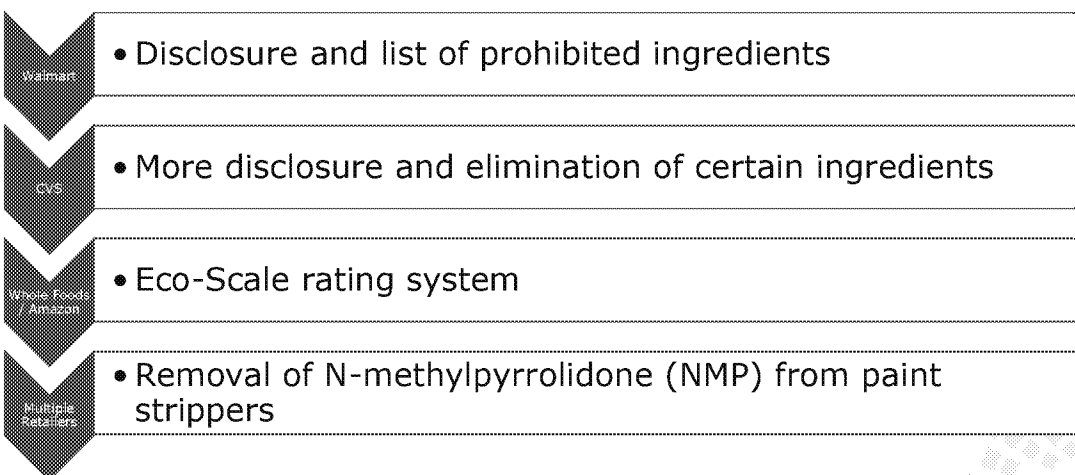
Consumer Demand for Green Products



Growing interest in eco-friendly consumer products:

- A 2016 Nielson Global Survey found that 26% of consumers ranked whether a cleaning product contained organic/all-natural ingredients as “very important” to their purchasing decisions
- 24% of consumers ranked environmentally friendly/sustainable packaging as “very important” to their purchasing decisions

Retailers Are Pressing Suppliers to Move Toward Greener Chemicals



Non-Governmental Organization Focus on Safer Chemicals



NGOs have formed to advocate for environmentally preferable products for homes, schools, institutions

- Some are focused on elimination of particular compounds, others on “green chemistry” generally
- Typically NGO's are seeking to educate consumers so they can influence retailers and up the value chain. See, <https://saferchemicals.org/mind-the-store/>



Focus on Indoor Environments



Healthy Building Network

- To advance human and environmental health by improving hazardous chemical transparency and inspiring product innovation

LEED (Leadership in Energy and Environmental Design)

- The most widely used green building rating system in the world
- LEED Certification is a label for structures that have been designed, built, and maintained with energy-efficiency and environmental health in mind

Healthy Hospitals Initiative

- Provides hospitals of all sizes with free tools and resources that help focus sustainability efforts (including the use of fewer chemicals)



Governments and Green Procurement



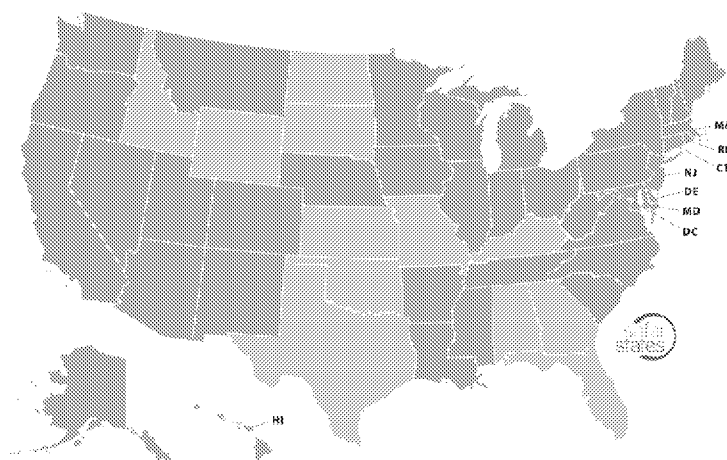
Federal, state and local governments are emphasizing procurement of green products including "environmentally preferable" or "green cleaning products"

Green products in schools

- California Chemical Product Evaluation Program
- New York's Green Cleaning Program
- Chemical Safe Schools in Rhode Island
- Green Universities (e.g. Harvard, University of Virginia, Georgia Tech)



States and Green Chemistry



Source: <http://www.saferstates.com/>

<http://www.saferstates.com/>

25 states are considering 132 policies to protect people from toxic chemicals
177 state policies have been adopted in 35 states

Suppliers Support the Evolution toward Greener Chemistries



Suppliers are interested in developing green products

However, these products are:

- Difficult to formulate using green chemistries while maintaining efficacy
- Require more expensive raw materials and generally do not have large margins
- Communicating information about product benefits to consumers/purchasers is critical to viability of such products



Suppliers Support the Evolution toward Greener Chemistries



To date, cleaning products have been much more broadly introduced than biocides.

Issues hindering development of biocidal products:

- Difficulty and high cost of formulations, as with all green products
- Difficult to describe properties due to regulatory restrictions
 - Use of certain marketing terms is prohibited (e.g., safe, natural, environmental preferable)
 - EPA's "Design for the Environment" program is the **only** indication of environmental preferability allowed on FIFRA-regulated antimicrobial products
<https://www.epa.gov/saferchoice/design-environment-programs-initiatives-and-projects>

Suppliers Support the Evolution toward Greener Chemistries



Consumer Chemical Product Suppliers support regulatory change to facilitate product evolution:

- Regimes should be flexible to allow truthful, non-misleading claims on all products including biocides
- Third party certification of green biocides should be allowed, as it is for non-biocidal chemical products such as cleaners



Questions

